

REMARKS

The Office Action mailed on December 14, 2000 has been received and its contents have been carefully reviewed. As of the last reply, claims 1-2 and 4-20 were pending. The current Office Action has withdrawn claims 11-12 and 18-20 from consideration. In addition, in this reply, claim 9 has been amended and new claim 21 has been added. Therefore, at least claims 1-2, 4-10, 13-17 and 21 are pending for further consideration on the merits.

Initially, as noted above, the Office Action has withdrawn from consideration claims 11-12 and 18-20. Claims 11 and 12 recite a feature similar to original claim 5 of the width of the reinforcement member being less than that of the corrugated fins (in claim 11, it recites specifically that the reinforcing section of the reinforcement member has a width less than that of the corrugated fins). Therefore, Applicants respectfully believe that claims 11 and 12 should not be withdrawn from consideration at this time.

Furthermore, the Applicants respectfully believe that the basis for withdrawing claims 11-12 and 18-20 is not adequate. The Office Action should point why these claims are in a different search class and group, as opposed to the other claims. The Applicants respectfully believe that only stating that "claims 11-12 and 18-20 are drawn to a distinct device from the originally claimed device", by itself, is not a sufficient basis for withdrawing these claims. Rather, Applicants believe that the claims are properly considered with the other pending elected claims.

The Office Action has rejected claims 1, 2, 4 and 13 under 35 U.S.C. §102(b) as anticipated by Ikagawa (JP 4-244596), or, in the alternative, under 35 U.S.C. § 103 as obvious based on Ikagawa. Claims 5-8, 10, and 16-17 are rejected under section 103 based on Ikagawa in view of Kado (JP 4-288485). The Patent Office cites Kado Figures 1 and 5 for disclosing "that it is known to have a heat exchanger having its corrugated fins wider than the reinforcement member." In addition, claims 9 and 14 are rejected under section 103 as unpatentable based on either JP 9085541 or JP 61-25734 in view of Ikagawa. Dependent claim 15 is rejected under section 103 based on Ikagawa. Applicants respectfully traverse the rejections as explained below.

Concerning independent claim 1, Ikagawa does not disclose the structure as recited in claim 1 for fixedly inserting the insertion section of the reinforcement member into the reinforcement hole. Ikagawa generally discloses that the insertion holes 15 have a shape coinciding with the front end 13 of side plate 11 and that the insertion hole 15 is

formed in a tapered shape 15a toward the radius direction of the header 2 for inserting the side plate 11. See Ikagawa, translation, pages 1-2. Ikagawa does not disclose or suggest the specific recited structure of claim 1 for press-fitting the insertion section into the reinforcement hole. Thus, Ikagawa does not disclose that the reinforcement hole has circular-arch sections and a linear section between the circular-arch sections, and the insertion section has a specified width relative to the shape of the reinforcement hole. The recited structure provides a sturdy fit of the reinforcement member in the hole, for an improved brazed structure. See application, page 12, line 28 to page 13, line 2. Therefore, claim 1 is patentable over the cited art.

Turning to independent claim 5, it would not have been obvious to make the proposed combination as stated in the Office Action. In that regard, the disclosure of Kado is unclear. In Kado, Figures 1, 3, and 5 are directed to a same embodiment as to the tubes, plates and fins. Figure 3 depicts the reinforcing plate 40 as having essentially the same width as the fins 30, and suggests that the plate 40 may actually cover part of the top layer of fins 30 in the assembled structure. In addition, Figure 1 does not give any indication that the fins 30 are wider than plates 40. Kado is simply not clear on its teaching of the relative widths of the fins 30 and plates 40. Therefore, Kado cannot be said to disclose or suggest corrugated fins wider than the reinforcement member, as asserted in the Office Action.

Moreover, even if Kado could be argued to disclose having fins wider than the plate 40, it would not be obvious to employ such larger fins in the structure of Ikagawa, which discloses side plates and tubes that are "substantially the same length, thickness and width." Ikagawa, translation, page 1. In Kado, as best understood, the fins 30 do not extend greater than tubes 20, so that the overall width of the heat exchanger is not increased. The person of ordinary skill in the art would not find it obvious to further extend the fins beyond the tubes in Ikagawa since it would cause an increase in lateral width of the heat exchanger, which is undesirable. Therefore, claim 5 is patentable over the cited art.

For independent claim 9, this claim is exemplified by Figure 9 of the application, where only the fins 15 are guided along the horizontal guide surface 25a, and the tubes do not contact this guide surface during assembly. None of the cited art shows having tube guides on opposite sides of the base member and keeping the tubes at a spaced

distance from the horizontal guide member that supports the fins, as recited in claim 9. This achieves the advantage noted at page 16, lines 12-20 of the application.

In addition, the dependent claims are patentable for at least the reasons noted in connection with the independent claims, and therefore it is not necessary for applicants to address all the specific comments in the Office Action as to these claims. The dependent claims do provide additional features carrying patentable weight. For example, for dependent claim 4, the Office Action cites Figures 1 and 3-5, but they do not specify or suggest the extent of the ends of the headers. Therefore, the recited distances specified in claim 4 are not anticipated or rendered obvious by Ikagawa.

Finally, new dependent claim 21 has been added, and this feature is exemplified in Figure 2. As shown in Figure 2, the C-shaped reinforcing section of the reinforcement member faces outward from the tubes and the corrugated fins. With such a structure, the width of the reinforcement member is not dictated by the width of the corrugated fins, and the two components can be made of any relative widths. This claim is patentable for this additional reason (along with the reasons stated in connection with claim 1).

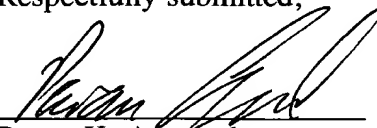
In short, Applicant respectfully asserts that the pending claims are patentable over the cited art.

CONCLUSION

In view of the foregoing, it is respectfully urged that the present claims are in condition for allowance. An early notice to this effect is earnestly solicited. Should there be any questions regarding this application, the Examiner is invited to contact the undersigned at the number shown below.

March 14, 2001
Date

Respectfully submitted,


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THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY DEFICIENCY OR CREDIT ANY OVERPAYMENT TO DEPOSIT ACCOUNT NO. 19-0741.

Version with Markings to Show Changes Made

In the Claims:

Please amend the claims as follows:

9. (Amended) A method of assembling a heat exchanger core comprising steps of:

guiding fins along a horizontal guide surface formed in a base member;

guiding both ends of tubes and insertion sections of reinforcement members into tube guides which are provided on opposite sides of the base member while arranging alternately the fins and the tubes such that the tubes are at a spaced distance from the horizontal guide surface;

placing the reinforcement members at either end in the direction of arrangement of the fins and the tubes to thereby constitute a core section; and

attaching header members to opposite sides of the core section.

Please add the following new claim:

21. (NEW) The heat exchanger core of claim 1, wherein said reinforcement member comprises a reinforcing section having a C-shaped cross section, wherein said reinforcing section faces in a direction away from said tubes and corrugated fins.